

DHSS Daily Follow-Up Review of Air Monitoring Data from the Bridgeton Landfill Area, June 1-2, 2013

The Department of Health and Senior Services (DHSS) has reviewed air quality screening data collected by the Department of Natural Resources (DNR) at Bridgeton Landfill from the afternoon of May 31 to the afternoon of June 2, 2013, while construction work at the landfill was temporarily suspended due to adverse weather conditions. On April 23, DNR began routine, twice daily, surveillance of hydrogen sulfide, benzene, and odor levels around the entire periphery of the landfill. In addition, DNR has provided continuous monitoring of reduced sulfur compounds (reported as hydrogen sulfide), sulfur dioxide, carbon monoxide, and total volatile organic compounds (VOCs) at three fixed locations. DHSS has reviewed both sets of data to identify potential public health concerns for short-term health effects. Generally, samples are collected near the property boundary and dispersion is expected to reduce exposure downwind of the sample locations.

Odors

Odors were reported by DNR as being moderate to strong at locations south and southeast the landfill on Sunday, June 2nd. Winds were predominantly from the north-northwest on that day.

- DNR detected low odors at several locations around the landfill using a Nasal Ranger olfactometer on Saturday, June 1st and early in the morning on Sunday, June 2nd. Stronger odors were reported on Sunday afternoon.
- DHSS continues to recommend that during periods of objectionable odor, sensitive individuals should stay indoors as much as possible, avoid outdoor exercise, and seek medical advice for any acute symptoms. Symptoms associated with exposure to strong odors include headache, nausea, and fatigue. Symptoms generally associated with strong odors typically disappear once the odors dissipate.

Hydrogen Sulfide and Other Reduced Sulfur Compounds

Hydrogen sulfide concentrations were well below levels of public health concern.

- The maximum concentration of hydrogen sulfide detected was 5.2 parts per billion (ppb). Hydrogen sulfide concentrations were detected by the Jerome meter, which is highly sensitive and specific to hydrogen sulfide.
- AreaRAE monitors detected low concentrations of reduced sulfur compounds at monitoring locations south and west of the landfill on Sunday, June 2nd. Low reduced sulfur concentrations were also briefly detected east of the landfill on the afternoon of Friday, May 31st. These compounds are not just hydrogen sulfide but primarily another reduced sulfur compound with lower toxicity.

Sulfur Dioxide

Average sulfur dioxide concentrations did not exceed levels of public health concern, except for a limited time period at one monitoring location near the landfill.

- For approximately 3 hours on the afternoon of May 31, the average sulfur dioxide concentration at the monitoring location east of the landfill was 0.02-0.03 parts per million (ppm), exceeding a health-based guideline for acute exposure.
- For approximately three hours on June 2nd, the average sulfur dioxide concentration at the monitoring location south of the landfill was 0.09-0.11 parts per million (ppm), exceeding a health-based guideline for acute exposure. However, these elevated concentrations were not confirmed by a second measurement of sulfur dioxide concentrations taken by DNR field staff.
- While exposure to these concentrations of sulfur dioxide may cause irritation and other short-term symptoms, considerable dispersion is expected to reduce potential exposure levels at nearby residential areas.

Benzene and Total VOCs

Benzene was not detected in ambient air at any of the surveillance locations around the landfill.

- Previous sampling has shown that, while several VOCs are present in the landfill source gas, benzene may be a primary VOC of public health concern.
- Total VOC concentrations were not at a level that indicates a need for compound-specific sampling.

Carbon Monoxide

Average carbon monoxide concentrations were well below levels of public health concern.

Radiation Rates

Gamma radiation rates continue to be at levels that are at or near natural background levels.

- Gamma radiation levels are monitored continuously at three locations around the site using AreaRae instruments equipped with radiation detectors.